

SECTION 03301

CAST-IN-PLACE CONCRETE USING VOLUMETRIC MIXERS

PART 1 GENERAL

1.1 DESCRIPTION

- A. The work of this section consists of furnishing and placing cast-in-place concrete using volumetric mixers.

1.2 QUALITY ASSURANCE

- A. Unless noted otherwise herein, all provisions of Section 03300 CAST-IN-PLACE CONCRETE apply to the work of this section.
- B. Volumetric mixers shall not be utilized for concrete placed into the work until:
 - 1. They have been properly calibrated.
 - 2. Test cylinders have been taken, and by analysis of testing laboratory, the delivered concrete is found to comply with the provisions of Section 03300 and the provisions set forth in the General Structural Notes (Sheet S0.01).
- C. Volumetric mixers shall be calibrated per ACI- 304.6R-91 (revised 97) and ASTM-C685.
 - 1. A qualified technician shall perform mixer calibration.
- E. Volumetric mixers shall be re-calibrated at each of the following:
 - 1. Prior to run of first test cylinders.
 - 2. Change or alteration of any one of the constituents used in the mix.
 - 3. At the beginning of each placement season.
 - 4. At periods not to exceed manufacturer's recommendations, or 6 months.
- F. Implement and document a maintenance program in strict compliance with mixer manufacturer's instructions.
- G. Implement quality control procedures to ensure consistency of the materials being used, including:
 - 1. Aggregate gradation,
 - 2. Moisture content of the aggregate.

H. Testing:

1. New test cylinders shall be taken and the compliance of each setting and/or mix verified prior to that product being incorporated into the work. In addition, test cylinders shall be taken at each of the following:
 - a. At the first use of the volumetric mixers.
 - b. At each modification of constituent material requiring recalibration.
 - c. At the beginning of each placement season.

1.3 SUBMITTALS

- A. In addition to the submittals required by Section 03300, provide the following:
- B. Copy of mixer manufacturer's recommended calibration and re-calibration procedures.
- C. Copy of mixer manufacturer's recommended maintenance procedures.
- D. Documentation of qualifications of calibrating technician.
- E. Documentation of each calibration, including weighing procedures, equipment and methods employed and the results of the calibration.
- F. Documentation, including description and material test results, of the constituent components, including admixtures and modifiers, utilized in the calibration.
- G. Documentation of compliance with manufacturer's recommended maintenance protocol.
- H. Description of quality control procedures to ensure uniformity of materials being used.
- I. Post placement submittals: In the event volumetric mixer provided material is placed into the work prior to the above Quality Control and Submittals being made and approved, submit the following:
 1. Copies of all of the above.
 2. Documentation of materials handling and storage procedures that have been utilized to provide consistency in the product (i.e. grading consistency and moisture control of aggregate.)
 3. An accurate detailed itemization of locations where volumetric mixer material has been placed.

PART 2 PRODUCTS

(Per Section 03300 and the General Structural Notes—Sheet S0.01)

PART 3 EXECUTION

3.1 GENERAL (per SECTION 03300)

3.2 MIXING

- A. Maximum allowable water/cement ratios (per General Structural Notes—Sheet S0.01) shall be set during the calibration procedure. No additional water shall be added to the mix, regardless of the slump.

END OF SECTION